

more than 19 mm (0.7 in) long and densely covered with short hairs (Wagner *et al.* 1999).

*Silene perlmanii* flowers in the spring, depending on climatic conditions. Flowers last for one day. Fruits develop in a few weeks. Little else is known about its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors (Service 1998b).

*Silene perlmanii* was discovered in the 1980s and was known from a few individuals in two occurrences in the southern Waianae Mountains on Federal and privately owned lands. The occurrences were about 1.6 km (1 mi) apart at Palikea and Palawai Gulch. Since December of 1997, no individuals are known to be extant in the wild. Currently, this species is known only from individuals under propagation at the National Tropical Botanical Garden (G. Koob, pers. comm. 2002; GDSI 2001; HINHP Database 2001; Service 1998b; 56 FR 55770).

*Silene perlmanii* typically grew on steep rocky slopes in *Acacia koa*-*Metrosideros polymorpha* lowland mesic forest at elevations between 493 and 919 m (1,617 and 3,014 ft) (HINHP Database 2001; Service 1998b; 56 FR 55770).

The major threats to *Silene perlmanii* are competition from the nonnative plant species *Ageratina adenophora*, *Erigeron karvinskianus*, *Melinis minutiflora*, *Morella faya*, *Passiflora suberosa*, and *Schinus terebinthifolius*; habitat degradation by feral pigs; and the risk of extinction from naturally occurring events and reduced reproductive vigor due to the small number of individuals believed to be extinct (HINHP Database 2001; Service 1998b; 56 FR 55770).

#### *Stenogyne kanehoana* (NCN)

*Stenogyne kanehoana* is a climbing vine in the mint family (Lamiaceae) with stems weakly four-angled, hairy, and 1 to 2 m (3 to 6 ft) long. *Stenogyne kanehoana* is distinguished from the only other member of the genus occurring on Oahu, *S. kaalae*, primarily by the size and color of its flowers. The flowers of *S. kanehoana* are large, white to yellow, and tipped in pink, while those of *S. kaalae* are small and deep purple (Weller and Sakai 1999).

*Stenogyne kanehoana* generally flowers from February through March, but flowering depends on precipitation, and flowers have been noted from January to as late as April. Fruits mature within six weeks. The lifespan of this species appears to be about seven to 12 years. Little else is known about its flowering cycles, pollination vectors,

seed dispersal agents, longevity, specific environmental requirements, and limiting factors (Service 1998b).

*Stenogyne kanehoana* was known from the east ridge of Puu Kanehoa in the Waianae Mountains, near the summit of the ridge connecting Puu Kanehoa with Puu Hapapa to the north and Puu Kaua to the south, a distance totaling approximately 2.8 km (1.7 mi). This population consisting of two plants near the summit of Puu Kanehoa on privately owned land was found dead recently. An additional occurrence in Kaluaa Gulch was discovered in 2000 by Joan Yoshioka of TNCH. This occurrence consists of one to six individual plants and is located on privately owned land (GDSI 2001; HINHP Database 2001; Service 1998b; 57 FR 20592).

The remnant occurrence of *Stenogyne kanehoana* is found in lowland mesic forest between 559 and 1,168 m (1,834 and 3,831 ft) elevation. Associated native plant species include *Acacia koa*, *Alyxia oliviformis*, *Bidens* sp., *Chamaesyce* sp., *Cibotium* sp., *Freycinetia arborea*, *Metrosideros polymorpha*, *Psychotria* sp., or *Scaevola* sp. (HINHP Database 2001).

The major threats to *Stenogyne kanehoana* are habitat degradation and competition for space, water, light, and nutrients by the nonnative species *Clidemia hirta*, *Paspalum conjugatum*, *Passiflora suberosa*, *Psidium cattleianum*, and *Schinus terebinthifolius*. The extremely small number of individual plants and their restricted distribution increases the potential for extinction from naturally occurring events. Other potential threats that have been suggested include fire and deforestation, but, at present, these probably are not serious threats to the species. Habitat degradation by feral pigs, predation by the two spotted leafhopper, and trampling by hikers are also thought to be threats to this species (HINHP Database 2001; Service 1998b; 57 FR 20592).

#### *Tetramolopium filiforme* (NCN)

*Tetramolopium filiforme*, a short-lived perennial member of the aster family (Asteraceae), is a dwarf shrub from 5 to 15 cm (2 to 6 in) tall with complexly branched stems. This species is distinguished from the other extant species on Oahu by its separate male and female flowers both on the same plant and its inflorescence of one to four heads (Lowrey 1999).

In cultivation, *Tetramolopium filiforme* germinates in about three weeks. Fifteen weeks after germination, the plants are approximately 9 cm (3.5 in) high and produce their first buds.

The first blossoms are noted about 18 weeks after germination. During growth, an inflorescence forms at the apex of each shoot while new shoots develop laterally. *Tetramolopium filiforme* is relatively short-lived, usually living fewer than five years. In the wild, it usually flowers in the late winter or spring but flowering can also be induced by heavy rainfall. Little else is known about its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors (Service 1998b).

Historically, *Tetramolopium filiforme* was known from the northern Waianae Mountains, from Ohikilolo Ridge, Keaau Valley, and Makaha Valley. This species remains in Keaau Valley, Kahanahaiki Valley, Makua-Keaau Ridge, Lualualei, Waianae Kai, and Puu Kawiwi on Federal, State, city, and county lands. The 21 known occurrences are estimated to contain approximately 253 individuals (EDA Database 2001; GDSI 2001; HINHP Database 2001).

*Tetramolopium filiforme* typically grows on dry cliff faces and ridges in dry and mesic forests at elevations of 247 to 978 m (810 to 3,208 ft).

Associated native species include *Artemisia australis*, *Bidens torta*, *Carex meyenii*, *Dodonaea viscosa*, *Peperomia tetraphylla* (ala ala wai nui), *Schiedea* sp., or *Sida fallax* (HINHP Database 2001).

The major threats to *Tetramolopium filiforme* are habitat degradation by feral goats; competition from the nonnative plant species *Acacia confusa*, *Ageratina riparia*, *Erigeron karvinskianus*, *Kalanchoe pinnata*, *Lantana camara*, *Leucaena leucocephala*, *Melinis minutiflora*, *Melinis repens*, and *Schinus terebinthifolius*; fire; potential impacts from military activities; trampling or collection by humans on or near trails; and a risk of extinction from naturally occurring events and/or reduced reproductive vigor due to the small number of remaining occurrences (HINHP Database 2001; Service 1998b).

#### *Tetraplasandra gymnocarpa* (Oheohe)

*Tetraplasandra gymnocarpa*, a long-lived perennial member of the ginseng family (Araliaceae), is a tree 2.5 to 10 m (8 to 33 ft) tall with 7 to 21 leathery, oval to elliptic leaflets per leaf. *Tetraplasandra gymnocarpa* is distinguished from all other species in the genus in that its ovary appears placed fully above the base of the flower (Lowrey 1999).

This species has been observed in flower in November 1991 and in fruit in May, September, and November. Little else is known about its flowering cycles,